



## Ground-based Midcourse Defense

The Ground-based Midcourse Defense (GMD) element of the Missile Defense System provides Combatant Commanders the capability to engage and destroy limited intermediate- and long-range ballistic missile threats in space to protect the United States.



### Overview

- GMD employs integrated communications networks, fire control systems, globally deployed sensors, and Ground Based Interceptors (GBIs) that are capable of detecting, tracking, and destroying ballistic missile threats.
- The Exo-atmospheric Kill Vehicle (EKV) is a sensor/propulsion package that uses the kinetic energy from a direct hit to destroy the incoming target vehicle. This hit-to-kill technology has been proven in a number of successful intercept flight tests, including 12 using GBIs.

### Details

- **GMD** is composed of GBIs and Ground Support & Fire Control Systems components.
- **The GBI** is a multi-stage, solid-fuel booster with an EKV payload. When launched, the booster carries the EKV toward the target's predicted location in space. Once released from the booster, the EKV uses guidance data transmitted from Ground Support & Fire Control System components and on-board sensors to close with and destroy the target warhead. The impact is outside the Earth's atmosphere, using only the kinetic force of the direct collision to destroy the target warhead.
- **Ground Support & Fire Control Systems** consist of redundant fire control nodes, interceptor launch facilities, interceptor communications terminals, and a communication network. GMD Fire Control (GFC) receives data from satellites and ground- and sea-based radar sources, using that data to task and support the intercept of target warheads using GBIs. The GFC also provides the Command & Control, Battle Management & Communications element with data for situational awareness.

### Deployment

- Ground Based Interceptors are emplaced at Fort Greely, Alaska, and Vandenberg Air Force Base, Calif. A total of 44 interceptors are currently emplaced.
- Fire control, battle management, planning, tasking, and threat analysis take place via a dual-node, human-in-control interface at Fort Greely and Colorado Springs, Colorado. Warfighters of the 49th Missile Defense Battalion at Fort Greely and of the 100th Missile Defense Brigade at Colorado Springs operate the system.
- All GMD components communicate through the GMD communications network, a secure data and voice communications system using satellite communication and fiber optic cabling for long-haul communications.